Design of Improved and Safer Ionizable Lipids for Next-Generation Nanomedicines

Tail

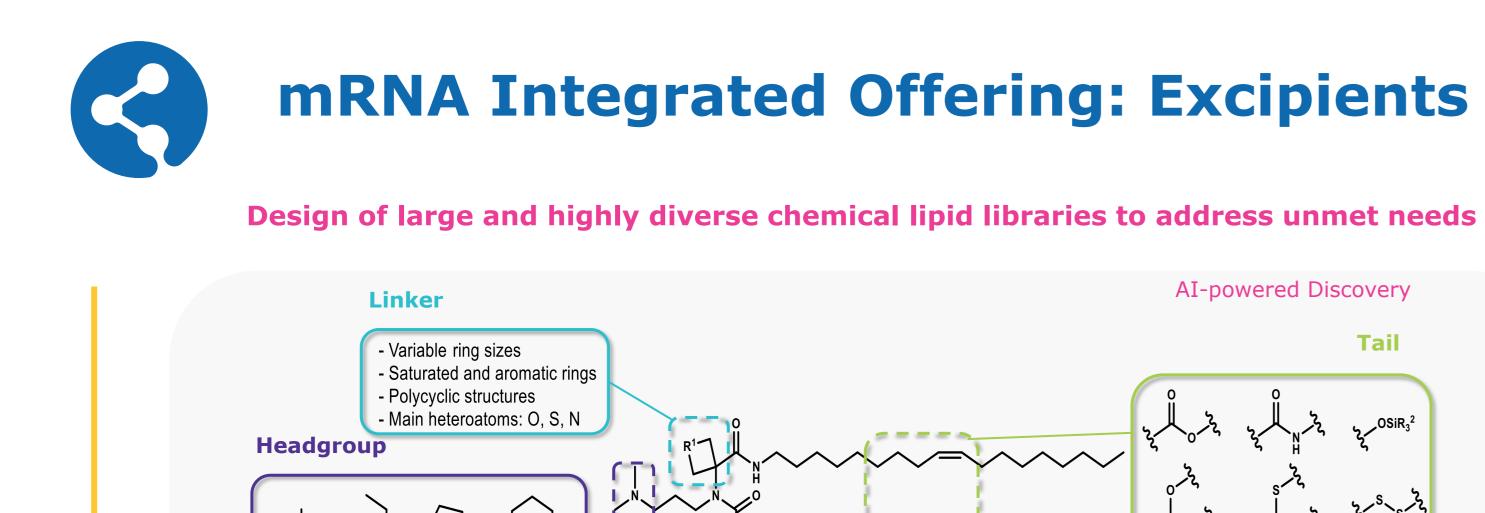


Sara S. Nogueira, Aleksej Turockin, Aditi Mehta MilliporeSigma | Innovation

Multiple chemical approaches

✓ Industry-leading purity standards

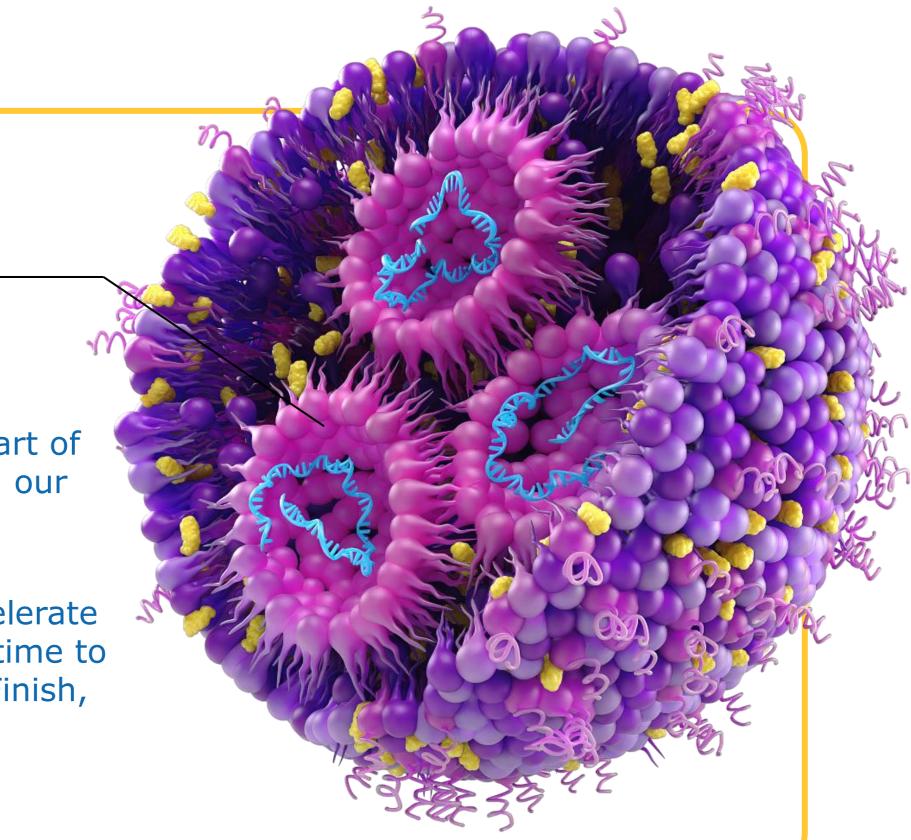
Scalable synthesis design



Ionizable lipid

Proprietary Ionizable Lipids Libraries are part of our custom design excipients accessible within our mRNA integrated offering.

Our customized **CDMO solutions** help you accelerate your drug development, mitigate and expedite time to the market, all the way from mRNA to Fill and Finish, from preclinical to commercialization.



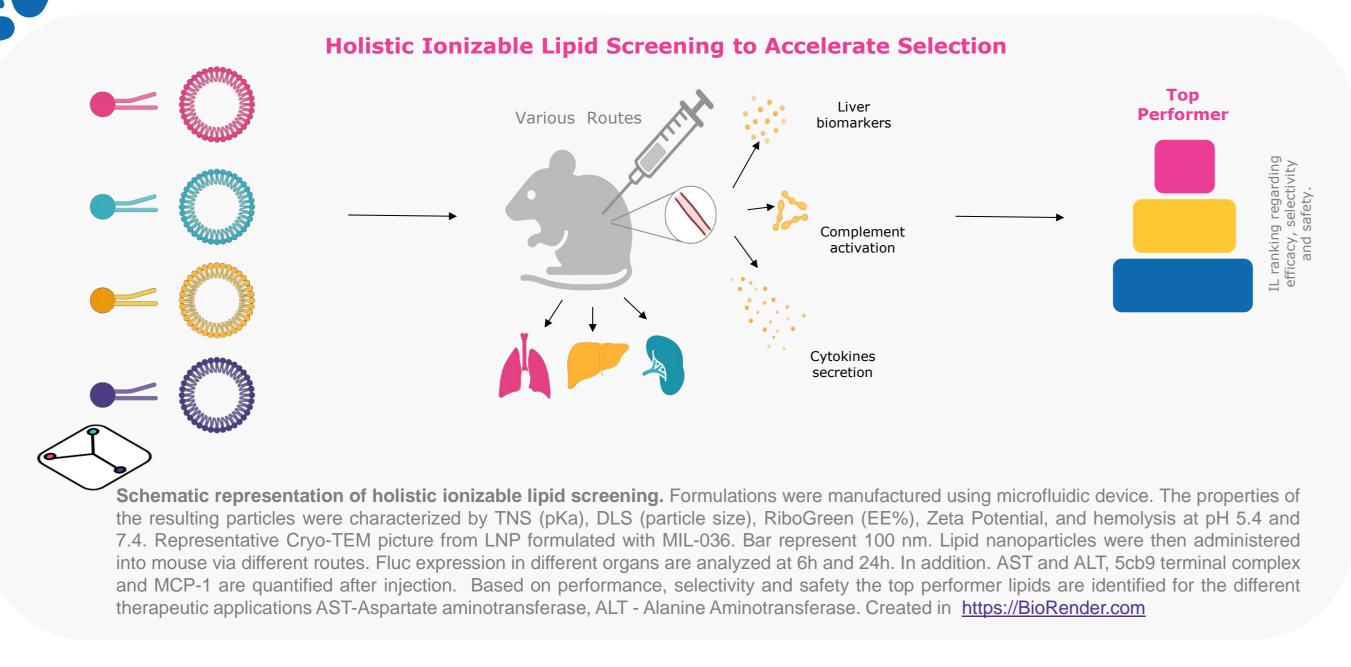


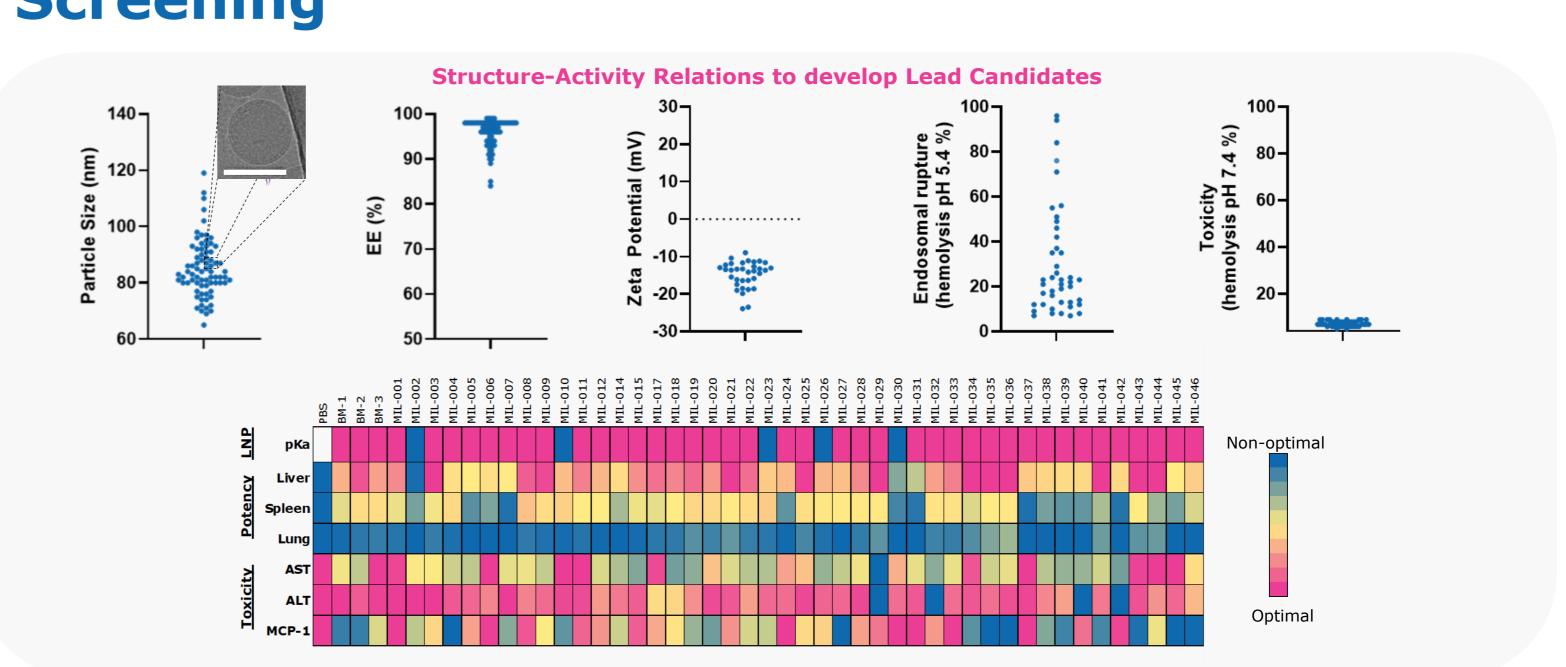
Suitable Formulation Properties for Holistic Screening

GMP manufacturing capabilities

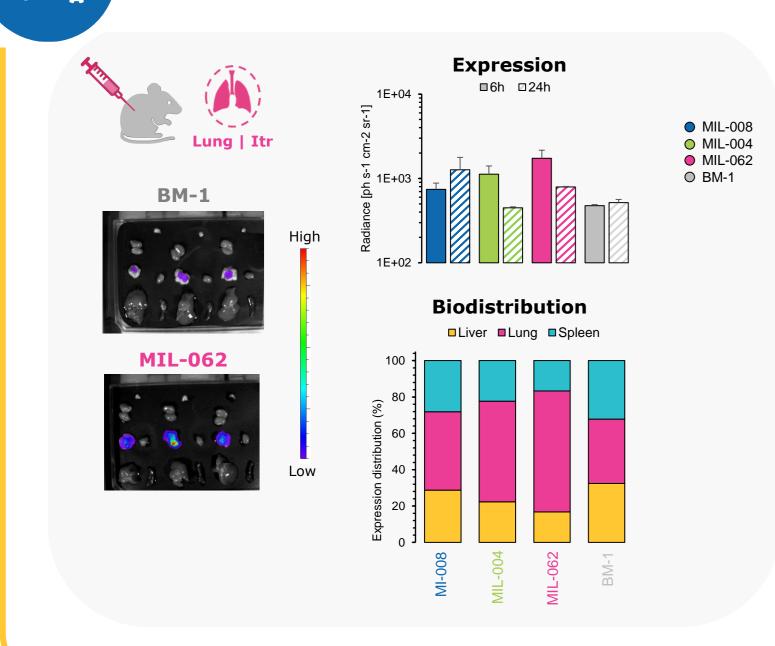
Virtual library >1 million distinct lipids

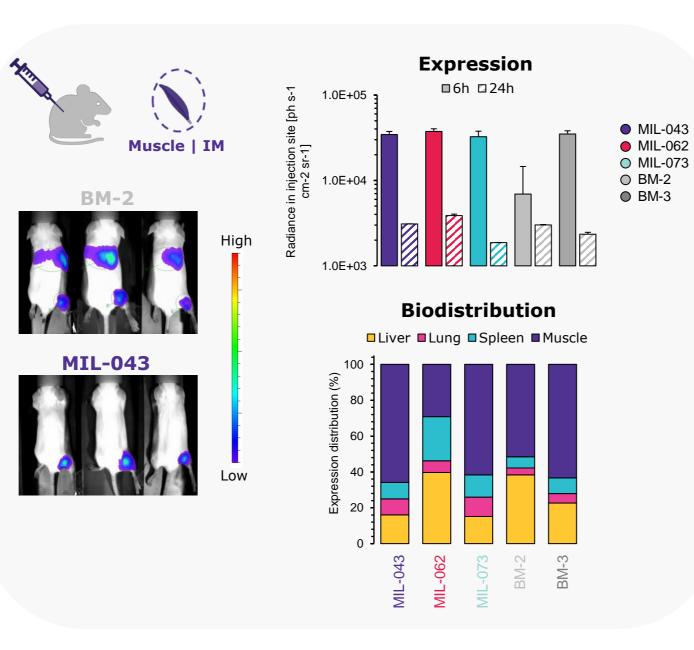
♥ Physical library of >500 characterized lipids

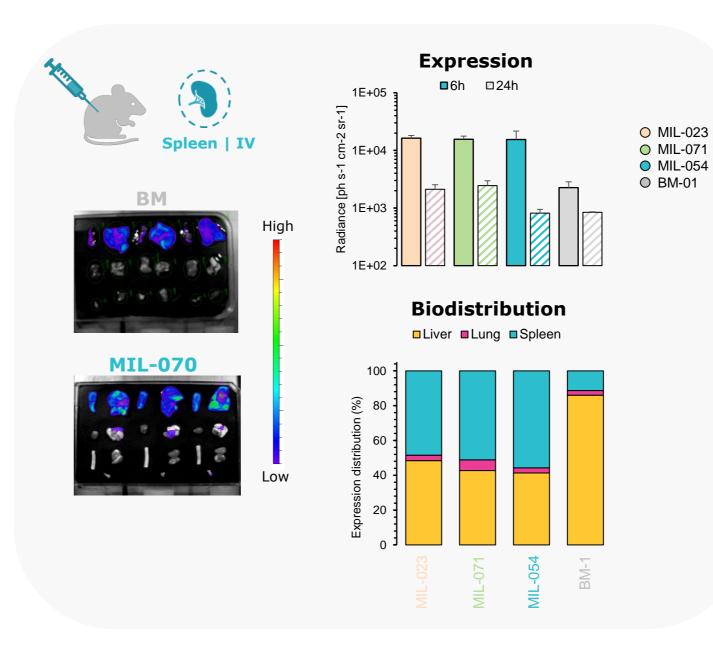


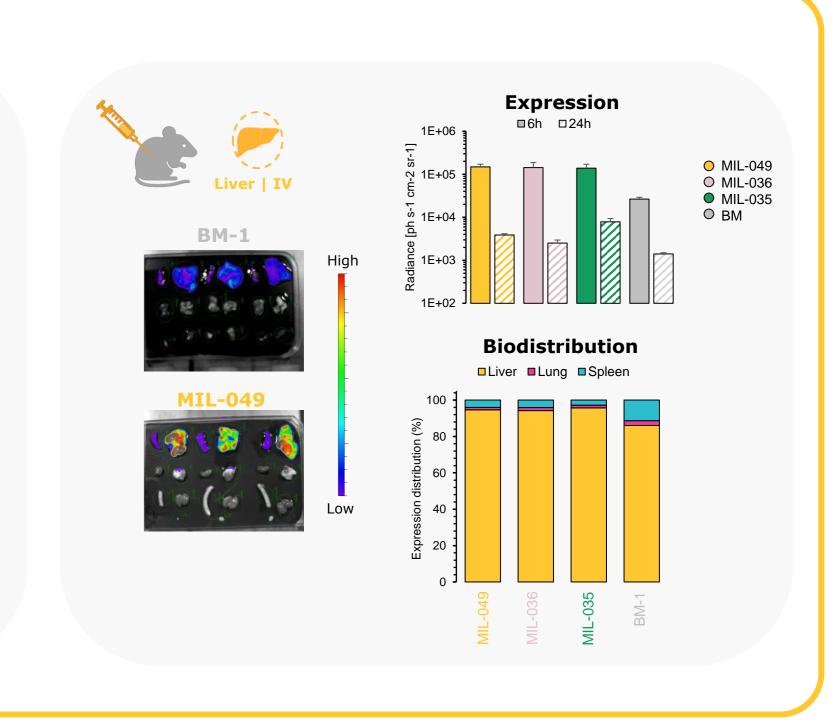


Identification of Effective and Safer Lipids for Multiple Applications

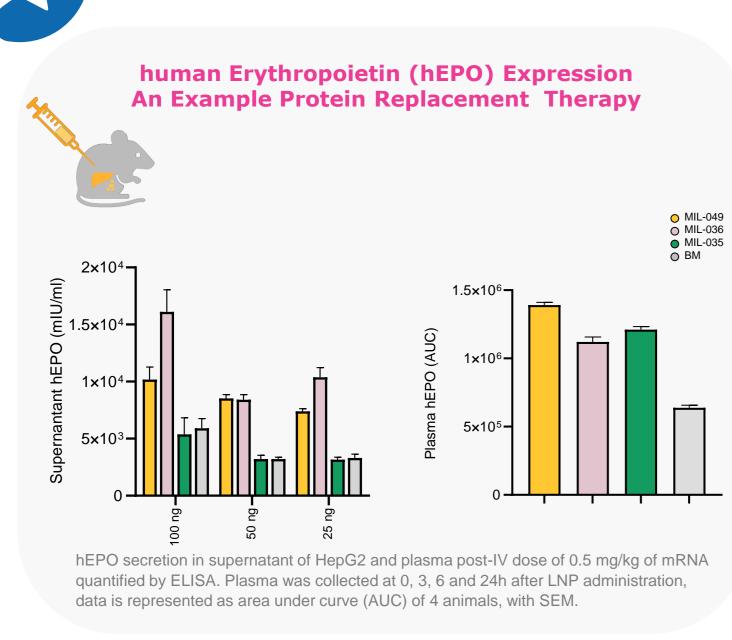


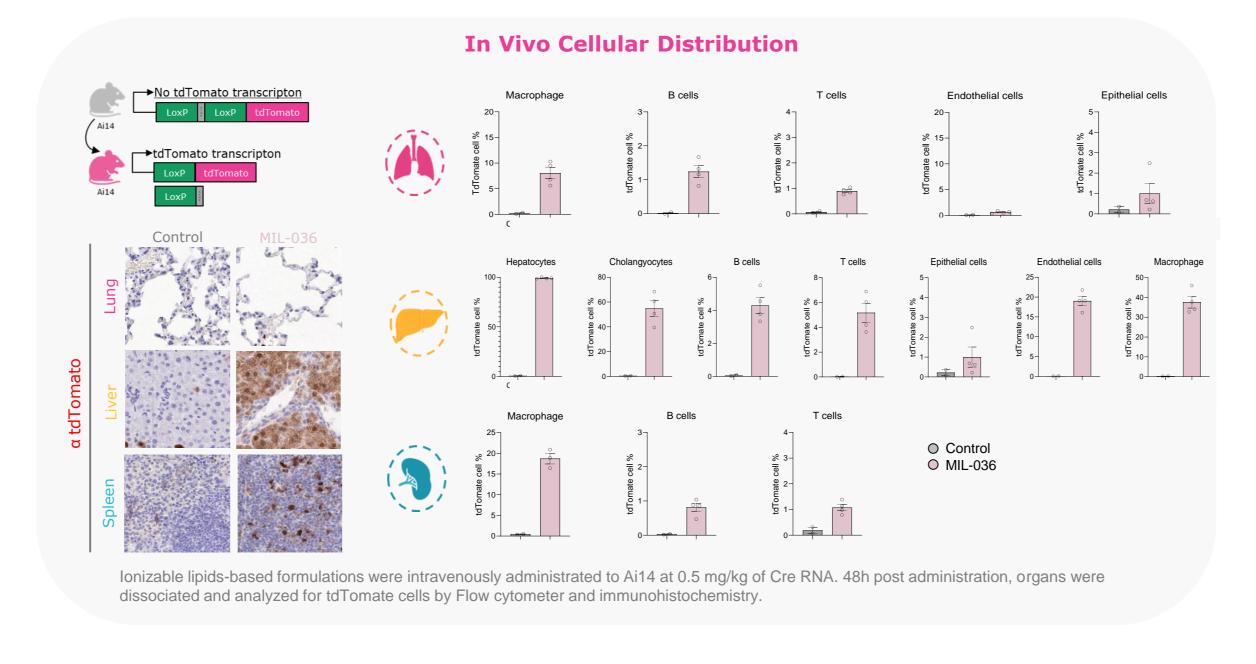


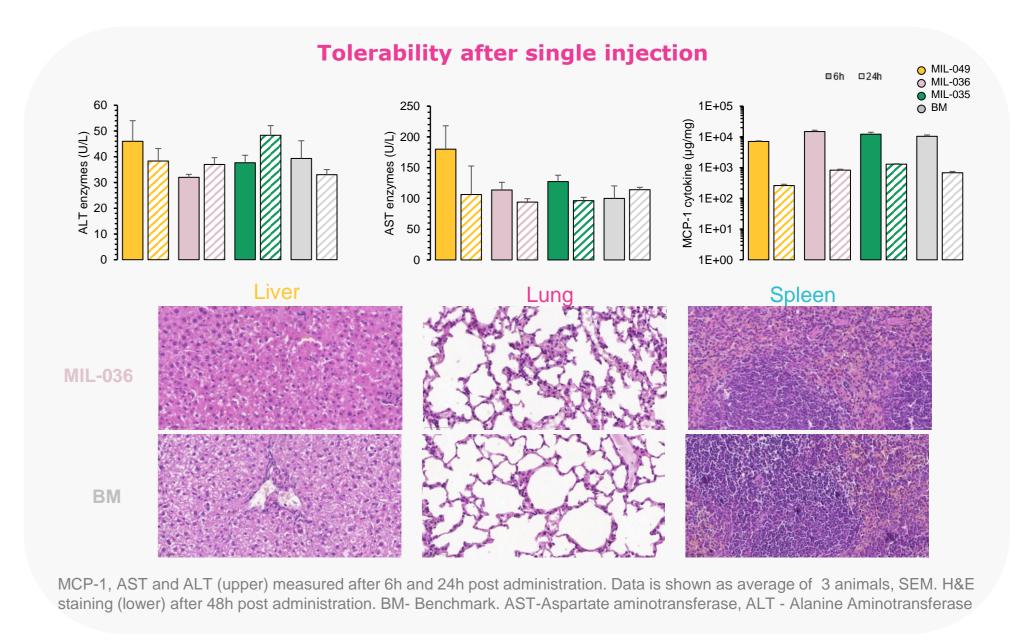




High Efficacy and Safety Driven by Highly Selective Expression









Conclusion

- Developed an approach to accelerate the creation of ionizable lipid libraries powered by AI
- A library of 500 MilliporeSigma ionizable lipids was generated, along with a virtually library of several hundred thousands, with high chemical diversity has been screened in vitro.
- Several MilliporeSigma ionizable lipids mediated tolerable and robust mRNA delivery in specific organs or tissues via different routes.
- MilliporeSigma libraries have the potential to address unmet needs in LNP technology.

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